



THESE SUMMER EMPLOYEES are part of a new program at the Labs — the Sandia Laboratories Work/Study Program. As participants they will work on bachelor degrees under a scholarship arrangement (tuition, books, fees, living expenses) and then are employed at the Labs during the summer. Selections, made from science and engineering students, are based on financial need, a good grade point average, and a high ACT score (particularly in math). Six members of this initial group will attend college this fall and the others will be considered for

inclusion in the program next year. Back row (l to r): Martin Bachicha (9322), UNM; Kathleen Gonzalez (9414); Michael Lash (9322), NMIMT; Rod Dominguez (9322), NMSU; Martin Mercado (5163), UNM; Katherine Matthews (5131), UNM. Front row (l to r): Patricia Kearney (5131); Sim Romero (9322), Judith Maloney (9633), and Katherine Peters (5112), UNM. The program is administered by Education and Training Division 3131 with Jack Hueter as coordinator.

# LAB NEWS

VOL. 26, NO. 15

JULY 19, 1974

SANDIA LABORATORIES • ALBUQUERQUE NEW MEXICO • LIVERMORE CALIFORNIA • TONOPAH NEVADA

## A Half-Million Pages

### Computer People Saving Paper

Lots of paper is being saved thanks to the efforts of Gary Shepherd (2634) and Phil Eyer (2644). An estimated half-million pages have been saved this year by converting large computer printouts from paper pages to microfiche. A single microfiche reduces 207 pages of printout to a 5x7-inch piece of film. Not only does it save paper, the system saves money.

An example is the Plant History ledger maintained by Accounting Division 4151. By converting to microfiche, some 30,000 pages and \$1400 are saved.

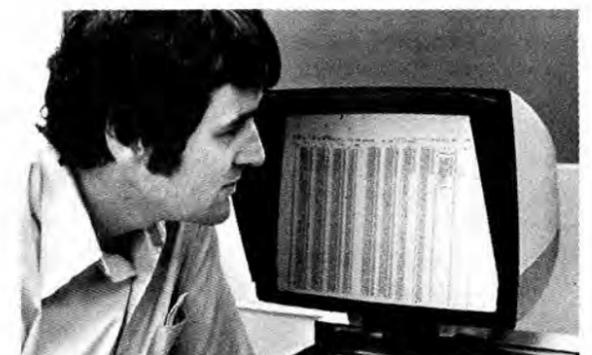
"It is seven and a half times cheaper to produce film than standard computer printouts," Gary explains. He and Phil are consultants for Sandia's DatagraphiX 4460,

the computer which produces the microfiche. "In addition, with an index on each piece of film and using a microfiche reader, specific information on the run is easier to find. Filing is no problem. Instead of many large cabinets you need only one small file. This feature enables establishment of several small microfiche locations for the Preferred Parts catalogue maintained by Design Information Applications Division 2645 for the Design Information Center, instead of the voluminous file space previously required."

Gary and Phil feel that many computer users could convert to the microfiche read out and reap the benefits of rapid access, simplified filing and reduced cost. If interested, Gary will be happy to show you how it works. Give him a call on ext. 1450.



HANDFUL of microfiche film displayed by Gary Shepherd (2641) is the equivalent of all the boxes of computer printout paper in the picture. One microfiche contains 207 pages plus index information.



MICROFICHE READER is easy to read, easy to use. Index information gives "map coordinates" for quickly locating specific information.

# Afterthoughts

Where are the reformers of yesteryear?--In the late '60's and early '70's the youth of the country became a national preoccupation, necessarily so because of the sheer stridency with which they advocated their causes. Demonstration followed demonstration, institutions were taken over by force, marchers blockaded whatever was construed to be in league with whatever was construed to be bad, and catch words and phrases proliferated like weeds--"relevance" (usually applied to the educational system), "power to the people," and many others mercifully forgotten. There was shrill insistence that the young view of necessary changes in our social fabric and educational system prevail, and many of us were swept along and solemnly tried to see the merit of these views (a courtesy seldom returned).

Well, a few years have passed, the firebrands appear to have burned out, mainstream America really hasn't changed much, and from today's perspective the whole movement shapes up as a gigantic spoof. One feels sort of like the sheepish victim of the shell game in the carnival. As for those legions of impassioned demonstrators, their slogans and preachments, one is drawn to Shakespeare's line in MacBeth: "It is a tale told by an idiot, full of sound and fury, signifying nothing."

\* \* \*

Yet another breakthrough for sociology--From Stanford University comes this startling disclosure: "In America the proportion of people who describe themselves as 'very happy' is about twice as great among the wealthy (56%) as among the poor (29%). A similar relationship between income and happiness is commonly reported within other individual nations." Or, as A. E. Neuman once said, "I've been poor and I've been rich. Rich is better."

\* \* \*

"A good society is a means to a good life for those who compose it; not something having an excellence on its own account."  
Bertrand Russell, Authority and the Individual \*js

## Events Calendar

**July 19-21** — Adobe Theater, "Candida," 8:30 p.m.  
**July 19-20, 26-27** — Frontier-Town Outdoor Theater, "New Mexico: This Is Our Song," 8:30 p.m., (821-3017), Cedar Crest.  
**July 20** — Jay Giles Rock Concert, 8 p.m., Civic Auditorium.  
**July 19-21** — Rio Grande Horse Show, 7 a.m., Horse Arena, State Fairgrounds.

**July 19-21, 26-28** — Old Town Studio, "And Miss Reardon Drinks A Little," (242-4602), 8 p.m.  
**July 22** — Lecture Under the Stars, UNM, Pat and Dick Meleski, "Echos of the Past," 8 p.m., Kiva.  
**July 25-28** — Adobe Theater, "Night of the Iguana," 8:30 p.m. (298-3323).  
**July 25-26** — Corn Dance, Santiago's and St. Ann's Day, Santa Anna Pueblo.  
**July 25-27** — Arts for Hearts Art Show, Winrock Shopping Center.  
**July 26-Aug. 3** — Oak Ridge Laboratories Exhibits, Winrock Shopping Center.  
**July 27-28** — NM Mt. Club, Pecos backpack, 15 miles, call Hank, 265-9296 by July 24.  
**July 27-28** — Appaloosa Horse Show, Horse Arena, 8 a.m., State Fairgrounds.  
**July 28** — NM Mt. Club, Sandia Crest trek, 2-9 miles, Western Skies, 8 a.m.  
**Santa Fe Opera: July 20** — "La Boheme"; **July 31** — "The Magic Flute"; **July 19, 24, 27** — "La Grande-Duchesse de Gerolstein"; **July 26** — "Lulu"; **Aug. 1** — "L'Egisto," American Premiere.

## LAB NEWS

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### SANDIA LABORATORIES

An Equal Opportunity Employer

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 as does norma taylor while  
 bill laskar takes/makes pictures  
 &

in livermore lorena schneider does all

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 LAB NEWS  
 JULY 19, 1974



## Dick Claassen Will Chair Nat'l Study Of Critical Materials

Dick Claassen, Director, Electronic Components 2400, will chair a month-long study starting July 22 on "Critical Materials Technology in the Energy Program" for the National Academy of Sciences. Sponsored by the National Science Foundation and the Science and Technology Policy Office, the committee will report to the Federal Energy Office.

Ten scientists from industry, universities and government agencies constitute the group. They will identify efforts required in materials development to support current plans to alleviate energy problems. They will also identify factors associated with materials development bearing on fuels and fuel substitutes. The committee is concerned with the decade between 1975 and 1985. Authorities and experts from throughout the U.S. will be called upon for help in the project.

Lee Garner (4010) is assisting in the study and will help prepare the committee's report.

## Congratulations

Mr. and Mrs. Brien Boop (9615), a daughter, Erin Marie, June 27.

## Retiring



Florencio Romero (9713) Donovan Dawson (3646)



Charlotte Morter (9631)

## Deaths

Bill Sodja of Instrument and Facility Development Division 9334 died suddenly June 5. He was 51.

He had worked at the Laboratories since November 1953.

Survivors include two sons, a daughter and a grandchild.



\*\*\*\*

John Doyle of Stock and Materials Management Division 4821 died July 7 after a long illness. He was 60.

He had worked at Sandia since July 1948.

Survivors include a stepson and two grandchildren.



\*\*\*\*

Jack Stewart of TTR Development Division 9474 died July 13 after a long illness. He was 51.

Survivors include his widow and two sons.

He had worked at Sandia since June 1953.



### SANDIA LABS SAVINGS BOND CAMPAIGN FOR 1974

#### DIVISIONS WITH 100% SIGN-UP

0211	1535	1735	2331	2642	3711	4273	5624	8151	8257	8432	9424	9525
0212	1536	2111	2341	2644	3713	4275	5625	8152	8261	8433	9426	9526
1116	1537	2112	2342	3131	3714	4276	5626	8161	8264	8443	9481	9531
1131	1543	2113	2344	3132	3723	4277	5628	8163	8266	9321	9482	9532
1132	1561	2115	2412	3141	4121	4731	5643	8166	8332	9322	9485	9533
1133	1562	2116	2415	3144	4122	4735	5644	8168	8333	9331	9486	9535
1135	1564	2123	2431	3151	4124	4751	5713	8181	8334	9332	9511	9536
1247	1611	2124	2433	3152	4141	4752	5721	8182	8342	9333	9512	9537
1251	1642	2132	2442	3153	4142	4753	5722	8183	8344	9341	9513	9541
1255	1643	2133	2514	3155	4143	5115	5724	8184	8346	9343	9514	9542
1256	1651	2134	2515	3161	4152	5121	5811	8212	8362	9351	9515	9551
1511	1653	2314	2516	3162	4211	5155	5813	8213	8412	9353	9516	9552
1514	1711	2315	2523	3163	4212	5163	5832	8218	8421	9407	9521	9613
1522	1712	2323	2634	3311	4213	5222	5833	8252	8423	9411	9522	9627
1523	1714	2324	2635	3313	4221	5252	6011	8254	8424	9421	9523	9651
1525	1732	2325	2641	3624	4251	5623	8113	8256	8431	9423	9524	9654

#### HONORABLE MENTION

1111	1124	2441	3733	8265
1112	2322	3147	5725	8341
1115	2434	3612	8114	9471

LABS SAVINGS BOND CHAIRMAN Luke Heilman (9500) stands with satisfaction before the roll of those Labs divisions with 100 percent participation. Honorable mention is awarded when the division has at least 90 percent participation and has gained a 15 percent or greater increase in participation since last year. Overall Labs goal of 90 percent participation has been very nearly reached.

### Recreation Notes

## FUN & GAMES

**Golf** — Sandia Women's Golf Association Los Alamos Tournament results:

First Flight: Low Gross - Rosalie Crawford (1), runnerup - Rose Hainlen (Ret.)  
Low Net - Sybil Milligan (Ret.), runnerup - Emma Hollingsworth (4256)

Second Flight: Low Gross - Sandy Blose (9515), runnerup - Edith Worley (3147)  
Low Net - Pat Chisholm (3141), runnerup - Helen Watkins (3721)  
Low Putts - Betty Chappell (AEC/ALO).

\*\*\*\*

**Sandia Bicycle Ass'n.** — If you're interested in the future of cycling in Albuquerque, the best source document is "The Bikeway Study," released by the Bikeway Advisory Committee in March of this year. Complete with maps and a three-phase plan of implementation, the study will be the basis of a network of bikeways within the Albuquerque area. Call LAB NEWS on ext. 1053 if you'd like a loan copy of The Bikeway Study.

That's not a mirage at 7th and F (SE corner of parade grounds), it's a genuine, honest-to-blinkin' stop light. So you see, all you grumblers out there, progress is being made. Admittedly, the pace of that progress is charitably described as deliberate, but progress it is.



CONGRESSMAN JOHN ANDERSON hails from Illinois and visited Sandia last week in his capacity as a member of the Joint Committee on Atomic Energy. President Sparks was his host during a round of briefings on Sandia and its programs.

## Sympathy

To Ruth Jones (9514) on the death of her husband in Albuquerque, July 3.

To Terry Lashley (9718) on the death of his brother in Tennessee, July 3.

To Mildred Knight (9400) and Bob Knight (3623) on the death of their mother in Huntsville, W. Va., July 5.

To Don Schuler (5113) on the death of his father in Nebraska, June 20.

To Merle Alexander (3623) on the death of his father in Albuquerque, May 17.

# Meet Our YOT'S

We surmised that there might be major differences between YOT's and Sandians in general. There's only one, and it's obvious: YOT's are younger.

Several YOT's (Youth Opportunity Trainees) discussed with LAB NEWS their views on such subjects as career goals, the role of work, the political scene, and changing sex roles. the YOT's: Mike Garcia (5642), Chris Martinez (9332), Shirley Pino (9743), Barb Stepka (3144), Elizabeth Swint (5112), Jeanne Tomlinson (9631), and Guy Walton (5111).

It's a largely middle-of-the-road group, and we've assumed this sample is likely to be more or less typical of the 40 or so YOT's on-roll. They impressed us as bright, candid (to a point), and watchful.

Almost to a man/woman, they see high value in education and intend to get at least a bachelor's degree. Career goals include an architect, an engineer, an ethologist (sic), a medical technologist, an artist, one who hasn't chosen between medical biology and engineering, and one doesn't-know-yet.

And (thanks to some impressive efforts by Frances Morris and others in Jack Rex's employment organization 4251), most of these YOT's feel that their Sandia assignments are relevant to their career goals.

The work ethic is strong — so strong, in fact, that most haven't considered the possibility of alternatives to the workaday world. Except for the artist, who hopes to have her own shop "or follow the Art Fairs"

some day, all expect to work for someone else as a wage earner.

Politically, they're passive — no demonstrators, letter writers, precinct workers, or would-be mayors in the bunch. Three are registered to vote, but all were apathetic, if not disillusioned, about the political process. They agree with the lowered voting age, but feel that too few people in the 18-to-20 year bracket vote wisely. We



Guy

not? But after awhile I think I wouldn't be able to respect myself." A young woman from a local pueblo noted that it would be a very long time before her culture would accept such a role reversal. Another male noted he had already taken care of the kids — his younger brothers and sisters — so that such a prospect held no new terrors for him.

On the subject of families in general, all expect marriage, none seem particularly eager for it. And most would prefer two children, none more than that.

Finally, we asked about their interaction with Sandians. The question led to a discussion of attitudes: "I heard two guys saying there were just too many YOT's around this year." And, "some people resent us — they seem to feel that they didn't have a chance like this — but most Sandians think it's a good idea. And I certainly do." We do too. •bh



Elizabeth



Chris

suggested that voters in the 21-and-up bracket often vote on the basis of party, sex, or apparent ethnic affiliation. The YOT response: That's not the way it ought to be.

On the semi-political issue of beer and liquor for 18 year olds and the legalization of marijuana, more favor than oppose. That's not to say that their favorite off-work activities are beer drinking and pot smoking: most do neither but question the wisdom of laws that are widely broken.

All the YOT's, male and female, agree that it's a good thing for more career opportunities to be opened to women and minorities. One young woman, while endorsing the aims of the women's movements, thought that a consequence was increased tension between men and women. Another stated "Women's Lib is stupid," but didn't elaborate.

We asked for reactions to the scenario of the husband who stays home to care for house and kids while wife, who can get a better job than he can, goes out and works. All were a bit uncomfortable about such an arrangement but none was vehemently negative: "It would be okay for awhile" or (from a male) "Why



Jeanne

Mike



Barb



Shirley

# feed back

To get a response to your comments and questions about Sandia Labs, complete a Feedback form (available near bulletin boards) and return it to the Feedback administrator. The substance of questions and responses of wide interest is published in LAB NEWS.

*Q. I wonder why Sandia Labs does not use professional titles ("Dr. Jones")? Everywhere else, the non-professional staff (secretaries, etc.) recognize the status of a PhD, but at Sandia it's first names always. Is this tradition, policy, or is there a good reason?*

A. The practice of not using professional titles within Sandia Laboratories has been followed almost continuously during the past 25 years. Although there is no written policy, the practice became firmly entrenched during the administration of the late (Dr.) James W. McRae, who served as president of Sandia from 1953 to 1958. He was a strong advocate of informality and believed that titles are of interest mainly to one's peers and that since professional people are well known to each other within Sandia, we should only use them in outside contacts, mainly in professional circles.

A *Lab News* story which describes the work of James Brown, Div. 5106, is changed in the news release sent to outside media to Dr. James Brown, Physical Research Division, etc. Titles are also used in external correspondence, biographies, signed articles, etc.

The degree of formality observed in addressing one another in a given organization is a matter of choice. "Mr.," "Mrs.," "Miss" or "Ms." are customarily used within Sandia when a first-name relationship is considered inappropriate. The proper respect is thus accorded, without drawing attention to the differences in educational attainment of individuals.

— K. A. Smith - 3100

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*Q. Sandia is concerned about safe working conditions and safe conduct of employees. However too little concern is evidenced for contractors.*

Today I noted two contractor employees using pneumatic jack hammers and neither was wearing safety glasses. I reported this to the Safety Department.

It appears that the Security Inspectors observing the job should be aware of safe practices and would be instructed to immediately report unsafe actions.

A. Contractor personnel are required to abide by Sandia, AEC and OSHA safety standards and regulations and immediate action was taken to correct the condition you reported.

Plant Engineering Inspectors and Security Escort personnel have been instructed on hazard recognition and should take action to correct safety deficiencies. Recently hired Security personnel have been instructed on hazard recognition, and it is included in the annual retraining of the Guard Force.

Control of contractor activities lies with the Plant Engineering inspector assigned to the particular project, and correction of safety deficiencies should be implemented through the assigned inspector. When Guard personnel or other Sandia employees observe an unsafe act or condition by contractor personnel, the deficiency should be reported through the Safety office to Plant Engineering.

We are continually striving to increase

safety awareness and to correct safety deficiencies. Your observations and similar observations by others are welcomed in helping to reduce accident/injuries.

L. J. Heilman - 9500

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*Q. Many doctors now recommend that those age 35 and over undergo stress ECG's since they are such good indicators of future coronary disease. (See Parade Section - Albuquerque Journal of May 12, 1974.) Has Sandia Labs Medical considered stress ECG's for physicals?*

A. Serious consideration has been given to performing stress ECG's, but after consulting with recognized cardiologists, the idea was abandoned for the following reasons:

1. There are a great many false negative reports observed in doing the test.
2. 14% to 18% are false positive reports.
3. The test should not be performed without continual observance by a Board-certified cardiologist and all the necessary monitoring equipment. This is a must, since a certain percentage of people under stress go into heart failure of one type or another and radical emergency steps have to be instituted in order to preserve life.
4. In no clinic are stress tests done without clinical indications, i.e., unless signs or symptoms of cardiac abnormalities have already been detected. Such cases fall within the practice of the private physician.

S. P. Bliss - 3300

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*Q. I know that Sandia is placing more emphasis on opportunities for female employees. Specifically, though, I'd like to see Org. 200's comments on what Sandia is doing, if anything, in various areas? For example, are we planning some kind of training which will deal with those very subtle attitudinal problems which are really much worse than out-and-out blatant discrimination? Are we considering a better method of matching females' educational backgrounds and capabilities with their job responsibilities? Are we trying to identify women with management potential?*

A. Sandia is developing several programs along the lines of your expressed interest. Let me cite a few examples.

All supervisors will shortly attend a two-and-a-half day awareness conference dealing with attitudes toward women and stereotypes about women in business and the professions. Another program, soon to be initiated is aimed at creating interest among women in jobs traditionally male — electronics, machinist, inspection, expediting, design, auditing, etc.

Late this summer, supervisors will begin to carry out provisions of the FY 75 Affirmative Action Plan. The Plan emphasizes the need to review the records of female employees and to counsel these employees concerning their careers. Career assistance is also available from Personnel

representatives assigned to each vice presidency. And both the 200 staff and the training staff of Department 3130 are well qualified to counsel employees on career interests and educational needs.

The education experience, and performance of female employees are reviewed by personnel representatives whenever an opportunity develops for upward reclassification. The concerned supervisor justifies selection and non-selection of candidates, and organization 200 reviews his or her recommendations.

To identify women with management potential, the criteria — the same as those used to select men — include appropriate education, training and work experience. Also noted are personal traits such as demonstrated leadership ability and attitude toward work.

Other efforts include: the restructuring of jobs for greater utilization of women; work force analysis to determine if women are clustered in particular job categories; and a continuing review of our insurance, sickness absence and maternity programs in the light of affirmative action goals.

Janet Jenkins of this organization is now Women's Program Coordinator for Sandia and you are invited to discuss this subject further if you should so desire.

J. R. Garcia - 200

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*Q. At Gibson and Maxwell SE there is a gate in the KAFB fence, unguarded, that serves as an entrance to the Base for pedestrians and bikers. Why is this allowed here and not at the northeast corner of Kirtland East to eliminate or reduce bike traffic at the Wyoming Gate?*

A. Your comments were discussed with Col. Kalman Simon, Chief, KAFB Security Police. We learned that the gate referred to is indeed open to pedestrian and bicycle traffic (only) during operational hours and is unmanned. The gate remains locked during nonoperational hours. Col. Simon pointed out that, at this point on Gibson, KAFB housing areas are located on both sides of the street and some means of access for pedestrian (primarily Air Force personnel) traffic was required. Further, Col. Simon stated that KAFB management has determined that it was appropriate to leave the gate open, unmanned, and accept the risk of unauthorized use. In view of this apparent inconsistency, we have forwarded a letter to Col. Simon (copy attached).

— L.J. Heilman -9500

Text of letter from J.D. Martin, Supervisor Operational Security Division 1 (9551) to Col. K.D. Simon, USAF, Chief, Security Police KAFB, dated July 9, 1974:

"Subject: Bicycle Gate

Attached is an inquiry from one of our employees as to why a bike gate could not be installed at the northeast corner of KAFB-East to eliminate bike traffic at the Wyoming Gate.

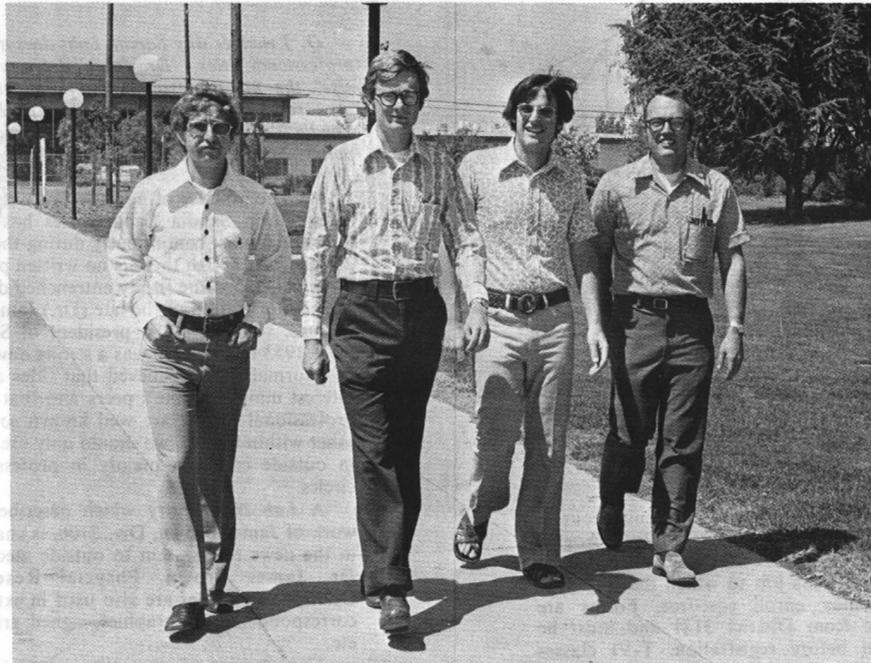
As we both know, there has been much discussion about the Wyoming Gate bike traffic. Considering this and the fact the KAFB management has apparently been willing to accept the risk of unauthorized entry through a pedestrian/bicycle gate at Maxwell and Gibson, the installation of a similar gate at the northeast corner of KAFB-East seems like a proper and logical action. Your review and concurrence and/or comments would be much appreciated."



FROM ANY ANGLE the Xynetics plotter was a tour highlight for students from Granada High School in Livermore. Bruce Affeldt, top center, and Bill Schmedding, top right (both 8421-2), were among the speakers on the tour.

# LIVERMORE NEWS

VOL. 26, NO. 15 LIVERMORE LABORATORIES JULY 19, 1974



PHD RECIPIENTS (from left) Billy Sanders (8115), Bob Kee (8111), Bill Ashurst (8115) and Dennis Nelson (8413).

## Supervisory Appointment



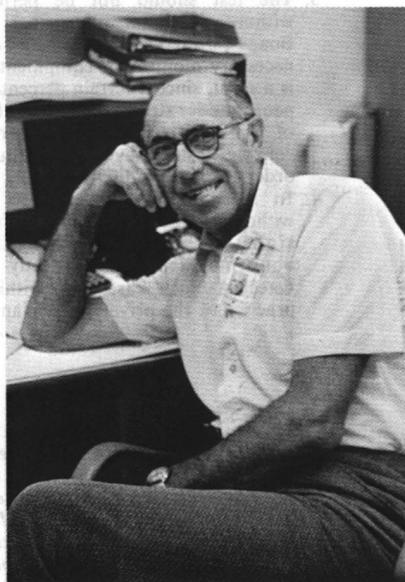
FRANK CUPPS to supervisor of Technical Publications and Art Division 8265, effective July 1.

Joining Sandia/Livermore in May 1956 as a tech writer, Frank has been a programmer in the Computing Division for the past eight years. Previously, he was a tech writer for a public relations firm in New York City and, from 1950-56, served in the U.S. Air Force.

Frank majored in engineering while attending Case Institute; in 1958 he received a BA in English from Columbia University. His MS in mathematics from San Jose State University in 1966 was through Sandia's EAP program. A member of the Chabot College faculty, Frank teaches mathematics classes there during evenings.

His leisure-time activities include tennis, skiing and bridge. Jane (wife), Frank and their two daughters live on Via Del Sol in Livermore. Another daughter and a son attend Sacramento State College.

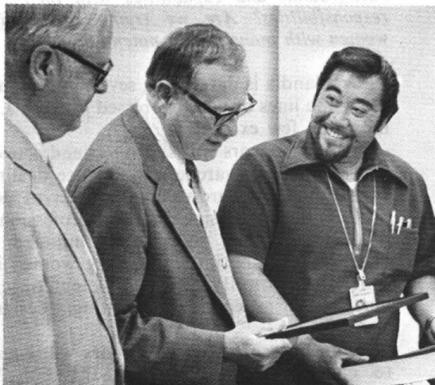
## Retiring



Chet Tarne (8184)



APPRENTICES GRADUATE — Electronic fabrication technician Everitt Davis (8421), left, and mechanical technician Dwight Soria (8257), right, recently completed SLL's apprenticeship program — four years of on-the-job training plus completion of related academic courses. Marking the occasion, the two received congratulations and best wishes — Everitt from Lee Davies (8420) and Dwight from Hilt DeSelm (8200) and John Pearce (8250).



## Four New PhDs

## Computer Serves as Backbone for Dissertation Work

Billy Sanders (8115) returned to the Labs recently after receiving his PhD in mechanical engineering from the University of California at Davis under Sandia's Doctoral Study Program. Three others received PhD degrees through Sandia's Educational Aids Program — Bob Kee (8111) and Dennis Nelson (8413) in ME from UC/Davis, and Bill Ashurst (8115) in applied science from UC/Davis-Livermore.

Rather than use experimental facilities, all four Sandians used the computer as the backbone for their doctoral work. Bob, who has been working in heat transfer and fluid mechanics modeling since joining Sandia in June 1969, simulated heat and mass inside a closed container by means of the computer. Title of his dissertation is "A Numerical Study of Natural Convection Inside a Horizontal Cylinder with Asymmetric Boundary Condition." Bob's BS degree was from the University of Idaho, and his MS came from Stanford University in 1970 under Sandia's One-Year-On-Campus Program.

The digital mini computer in an online mode was used by Dennis for vibration testing. Title of his dissertation is "Random Vibration Test Control Using the Digital Computer and the Discrete Fourier Transform." Involved in shock testing and instrumentation since joining Sandia in September 1966, Dennis is currently chairman of the American National Standards Institute's Committee on Shock and Vibration Data Analysis. Both his BS and MS

degrees were from the University of Nebraska in electrical engineering.

Bill's dissertation, "Dense Fluid Shear Viscosity and Thermal Conductivity Via Non-Equilibrium Molecular Dynamics," is a computer method for calculating transport properties by following the motion of a few hundred molecules. Visualization of molecular motion was made possible through a computer-generated movie of shear flow. Since joining Sandia in 1965, Bill has been doing aerodynamics calculations relating to reentry vehicles and numerical fluid mechanics. He received his BS degree from California State Polytechnic University and an MS from Stanford University, both in aeronautical engineering.

Billy's doctoral work involved the computerized calculation of the flow about a spinning aerodynamic shape. His dissertation, "Three Dimensional, Steady, Inviscid Flow Field Calculations with Application to the Magnus Problem," is an outgrowth of this work. At Sandia since June 1968, Billy has been performing gas dynamics and aerodynamics analysis and is the newly elected chairman of the local Mount Diablo Chapter of AIAA. His BS was from UC/Davis in aerospace engineering and his MS was awarded by Stanford University under Sandia's OYOC program.

Both Bob and Dennis are among the first EAP graduates to participate in the UC/Davis educational television classes on site at SLL. • Is

# Credit Union Reporter

By Bill Prekker (4154)  
Chairman, Education Committee

## Credit Union Bulletin Board

Bob Roberts (2133) sends us an item of interest in these days of 55¢/gallon gas. "Which is better for saving fuel: shut the engine off, or let it idle while waiting in line?" A study by Ford engineers shows that it is better to shut the engine off if you are going to be in one place for more than half a minute. You will save more gas that way. Tests show that a Ford V8 uses fuel at a rate of 0.0125 gallons per minute. Starting a warm engine, as when queued up, requires 0.005 gallons. Thus you could start your engine twice and shut it off during a 60-second period and use less gas than if you let it idle. Other engines might use less or more fuel for starting and idling, say the Ford experts, but the relationship will remain the same. Their advice: "Don't idle."

## U.S. Senate Now Debating Consumer Protection Agency



Now under discussion in the U.S. Senate is a bill which would have far reaching effects in improving the lot of the consumer. Already passed by the House of Representatives, the bill would create the Consumer Protection Agency (CPA). Intent of the bill is simple: to create an agency with a director and a small staff that would represent consumer interests when other government agencies are making decisions affecting prices, safety, or other consumer issues. The agency would have access to product and other data gathered by federal agencies and would be empowered to gain information by survey that it cannot get elsewhere. As the consumer's watchdog of federal agencies, the CPA could go to court to challenge decisions by these agencies which it considers inimical to the consumer's interest.

Advocates of the bill, such as Ralph Nader, see the CPA as a potent force for handling consumer complaints — a place where a letter will get some action. An alert CPA might also effectively question governmental actions such as its support of milk price increases — an action now the subject of suspicion and controversy.

Senator Sam Ervin opposes the bill on constitutional grounds and promises to lead a filibuster against it. Other opponents such as the U.S. Chamber of Commerce and the National Association of Manufacturers (now involved in a massive lobbying effort to kill the bill) say that no one government agency can represent all consumers, that the agency would be largely ineffective, and that another layer of government is not going to contribute to the efficiency of the existing structure.

The Consumer Protection Agency bill is currently being debated in the Senate.

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commuting information  
DIAL 4-RIDE

## ENERGY SAVINGS

COMPARED WITH LAST YEARS USAGE  
REPORTING PERIOD SEPT. '73 - JUNE '74

ELECTRICITY	1973 75,700 MWH.	12.7%
	1974 66,100 MWH.	
STEAM PLANT FUEL (EQUIV. OIL)	1973 185,800 BBLs.	13.8%
	1974 160,200 BBLs.	
VEHICLE MILES	1973 2,057,000 MI.	16%
	1974 1,727,000 MI.	

LAB NEWS PHOTOGRAPHER Bill Laskar is crazy (for trains). This inch-and-a-half to the foot scale model of a turn-of-the-century 10-wheeler steam locomotive represents four years of leisure time work. The engine actually burns coal, runs on tracks (7-inches apart) in Bill's backyard. Handbuilt steam whistle can be heard for three blocks, neighbors say, and the bell, also turned from a brass rod, rings in key of B-flat. Headlight and marker lights run on electricity created by a miniature steam turbo-generator on the engine. Locomotive weighs 600 lbs., is usually displayed in the den, but wife Emma, in background, is cool to Bill's firing it up in house.



# They All Laughed When I Said I Walked To Work

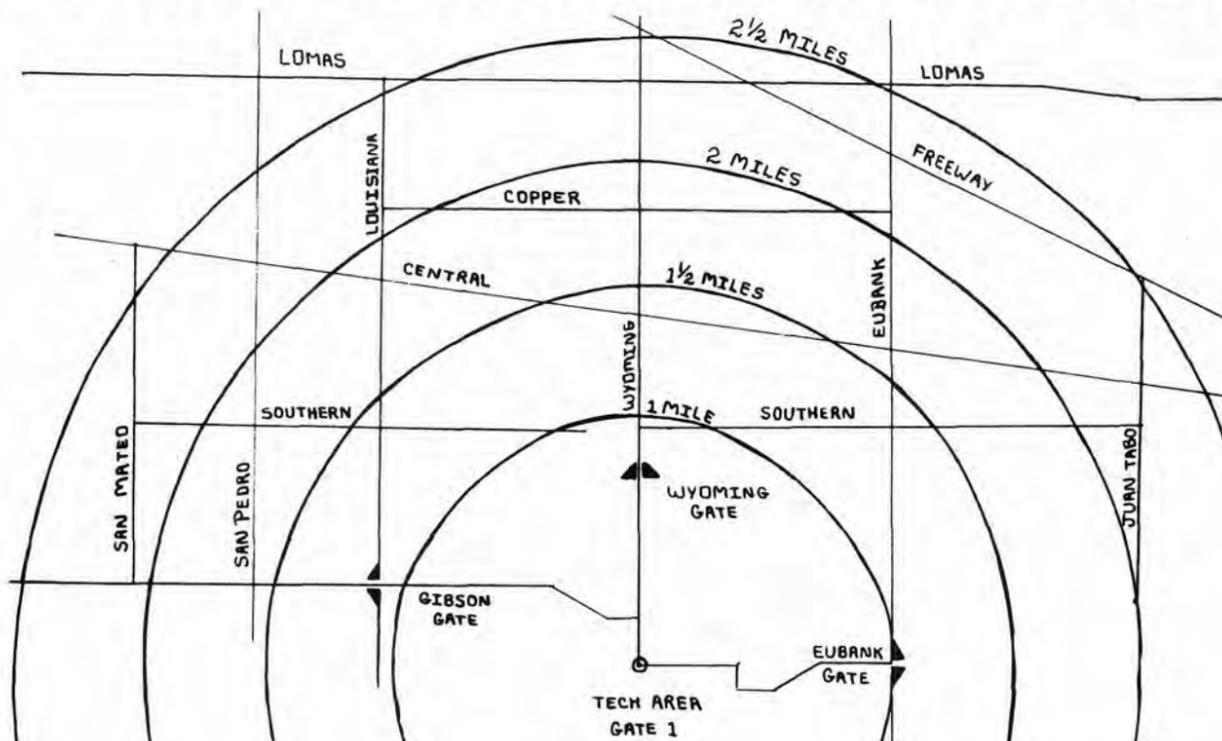
If you'll gaze for a moment at that portion of your body below the waist, you'll quickly perceive two remarkable instruments which doctors and the Army call the lower extremities, but ordinary folk call the legs. They can be shapely or shapeless, bowed or straight, smooth or bristly, and most are generally long enough to reach the ground.

By means of a subtle kinesthesia, a pair of legs can convey their owner from, say, Point A to Point B. Without outside help.

Let's assume Point A is your home and that Point B is Bldg. 800. Did you know that if these two points are, say, two miles apart (see map) your legs can cover that distance in about 30 minutes (give-or-take a few minutes)? Driving doesn't take much less time what with getting the car out of the garage, rush-hour traffic, and parking.

And walking is rather pleasant. By following residential streets until the Base is reached, you can enjoy the quietness of the morning. These streets usually have shade trees so that summer afternoon walking is likely to be much cooler than the interior of a car that's been sitting in a sun-baked parking lot. There's physical benefits too. Under Dr. Cooper's aerobics program\*, you'd get four points for two miles, and Dr. Cooper declares that only 30 points per week insures some commendable level of fitness.

It may be that you're ready to walk but feel that walking conditions on certain parts of the Base aren't really congenial. We have to concede that if your route takes you through the Eubank Gate, walking would not be very pleasant along the shoulder. But there are sidewalks just inside the Wyoming Gates and if you use the Gibson Gate a good dirt path is



HOW FAR? Check this map to see if your home is within walking distance. Two-mile walk takes about 30 minutes.

accessible just inside the gate to the right (south). It cuts across the school yard.

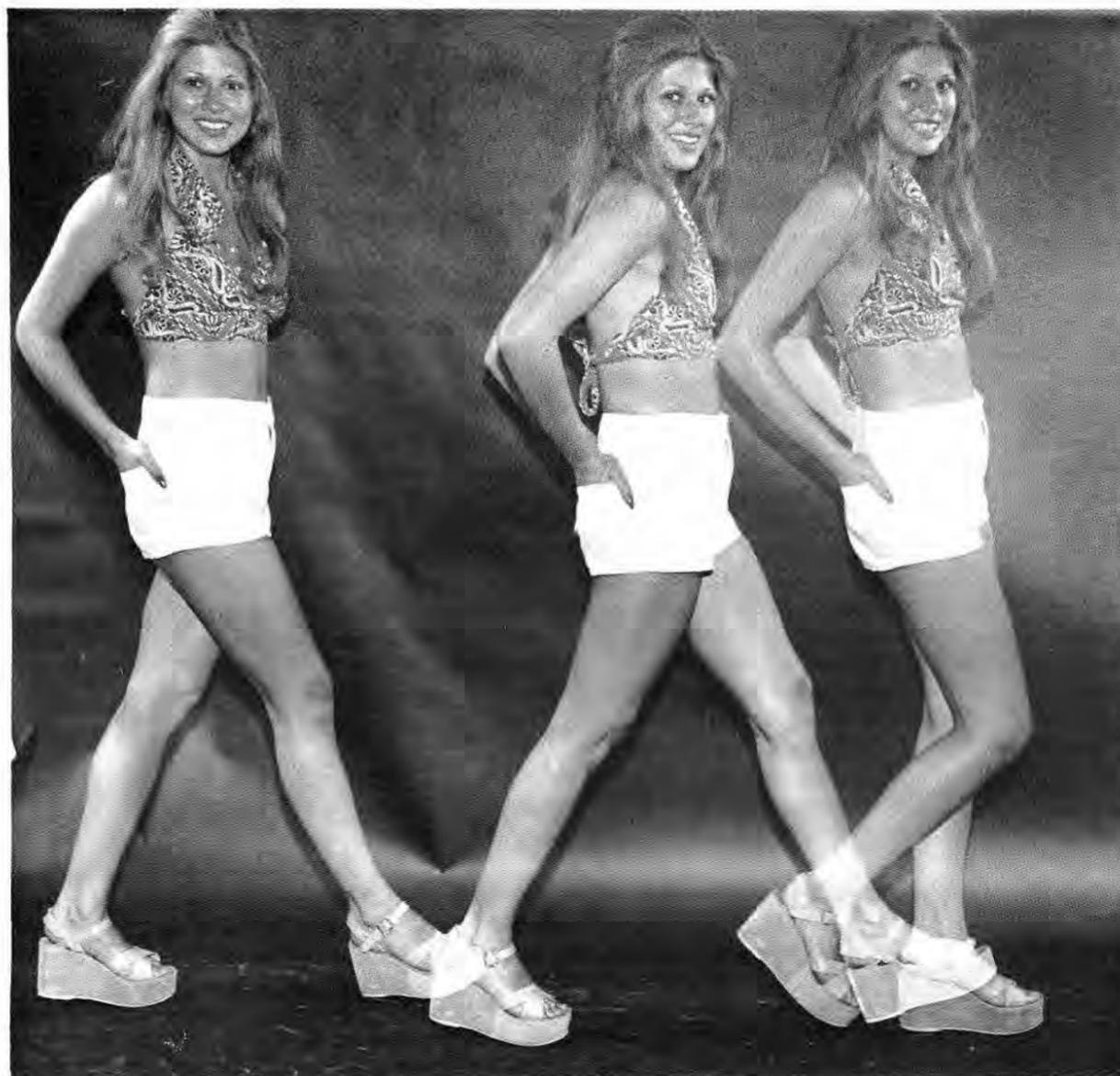
If a daily round trip by walking seems a little much, then consider taking the bus or, for that matter, car pooling one way. In any event, it's desirable to have an alternate means of getting home on those infrequent days when the weather closes in.

According to recent data, several hundred Sandians do live within a two-mile radius of the Labs. If you're one of them, give walking a try. It could be a great way to get to work.

\**The New Aerobics*, Kenneth Cooper, • js MD

## Take Note

Pre-registration period for evening courses at T-VI for the fall trimester is July 22-Aug. 9. Sandians in courses that are job-related or relate to a Labs job to which the employee aspires, may enroll cost-free. Forms are available from District 3131 and must be validated before registration. T-VI classes start Sept. 9. Catalogs and additional information are available from Ruth Brooks (3131).



NOTE anatomical pattern in demonstration of walk. Model alternately extends opposing extremities, aims at smooth, gliding effect. High platform footwear is especially commended for longer walks, is said to be available in Safety Stores.

## Authors

D.M. Haaland and R.T. Meyer (both 5824), "Reaction of Excited Iodine Atoms with Methyl Iodide: Rate Constant Determinations," Vol. 6, No. 3, INTERNATIONAL JOURNAL OF CHEMICAL KINETICS.

J.R. Asay (5167) and L.M. Barker (5163), "Interferometric Measurement of Shock-Induced Internal Particle Velocity and Spatial Variations of Particle Velocity," Vol. 45, No. 6, JOURNAL OF APPLIED PHYSICS.

E.L. Burgess and R.D. Nasby (both 5155), "Application of the Lifshitz-Slyozov Theory to Precipitation of Phosphorus in Silicon-Germanium Thermoelectric Alloys," Vol. 45, No. 6, JOURNAL OF APPLIED PHYSICS.

R.G. Kepler (5810), "Two-Photon Transitions to Highly Excited States in Anthracene Crystals," Vol. 9, No. 10, PHYSICAL REVIEW B.

S.M. Myers, S.T. Picraux (both 5111), and T.S. Prevender (5833), "Study of Cu Diffusion in Be Using Ion Backscattering," Vol. 9, No. 10, PHYSICAL REVIEW B.

B. Morosin (5154) and J.F. Schirber (5150), "Low-Temperatures, High-Pressure X-Ray Cell," Vol. 7, Part 2, JOURNAL OF APPLIED CRYSTALLOGRAPHY.

G.C. Tisone (5212), "Lifetime and Quenching Rate Constants for the Green Bands of XeO," Vol. 60, No. 9, THE JOURNAL OF CHEMICAL PHYSICS.



# Alan Pope Fights Crime

Alan Pope (5600) was recently awarded a plaque of appreciation from the Albuquerque Chamber of Commerce for his efforts in crime prevention. President of Turn In a Pusher (TIP), Alan does more than head an organization.

He is in turn an advocate, critic and monitor of police efforts and the justice system of New Mexico.

"I call it terrible," Alan says. "In 1974 we will have some 20,000 crimes reported in our metropolitan area. Experience around the country shows that people have become so disenchanted with the criminal justice system that they report less than half of what really happens — 50,000 crimes would be a fair number. For this, the way the system of justice operates, we end up with about 250 criminals sent to the state penitentiary, roughly one for every 200 crimes. I call it terrible when one kid in eight ends up in court before he or she is 18 years old, and I call it terrible that 1000 Albuquerque kids under 18 will commit one or more felonies this year — not misdemeanors like breaking a street light, but purse-snatching, burglaries, auto thefts, dope sales, even armed robberies. I also call it terrible that this very morning 150 criminals

began their daily routine — residential burglaries."

A two-time victim of burglaries himself, Alan deplores the high incidence — highest in the nation — of this crime in Albuquerque. He lays the blame squarely upon the judicial system.

"I could cite 100 cases where the courts made everybody play make-believe about hard rock evidence," Alan says. "One of our policemen, Cordy Garcia, saw a couple of well-known burglars drive by with a TV set on the back seat of their car. He called in and got a verbal search warrant, and arrested the men. Sure enough — the TV had been stolen. But the court threw out the case because Cordy didn't know for sure that *that particular TV* had been stolen at the time he called in.

"In my judgement, sentencing in New Mexico tends to be lenient. I feel very strongly that tough sentences are a deterrent to crime. A burglar can be paroled after serving eight months in this state. Since such a pitifully few actually get caught and only a fraction of those go to prison, there is almost no deterrent to burglary."

The TIP organization provides 24-hours a day telephone service — call 247-0234 —



Alan Pope

whereby anyone can report a suspected drug pusher and remain anonymous. "What we want is information about the pusher — name, address, car license numbers and the like," Alan says. "This information is turned over to city, county and state police, and they gratefully acknowledge the help. An average of 10 names a week is reported."

Alan has good words for the efforts of our local police. "They are a hard-working bunch who operate under unbelievably poor conditions," he says. "We need about 100 more policemen and need to pay them about 50 percent more. We also need more police money for new equipment, for computers and for systems analysis of the arresting procedure."

Alan advocates all of these things in his many letters to the editor, to legislators, and other elected officials. In his latest effort he is a one-man lobby to establish a state anti-crime commission responsible for directing and coordinating all agencies responsible for crime prevention.

"Legislators, police, district attorneys, courts, the state pen and the parole board supposedly try to reduce crime," Alan says. "But the striking thing about the six agencies is that they have no directing organization. Nobody reports to anybody. It would really help if our legislators put all this in some sort of businesslike order. We need a director of crime reduction."

Alan invites anyone interested in helping to contact him. "We are all victims of crime," he says. "The only way we can reduce the crime rate is for concerned citizens to become involved and to see to it that the job gets done. It's possible. The U.S. has 20 times more crime than England, 100 times more than Japan. Crime is the national shame of the United States." • dg



HANK WILLIS (3130) was scheduled for a service award (25 years) photo for the Mileposts page of LAB NEWS. But a contraption called a hang glider intervened, one thing led to another, and Hank ended up in the hospital with a busted leg. He's the one in the PJ's. Mayor Kinney is at left, Ken Smith (3100) and Ziggy Shelton (3132) stand behind, while Mrs. Willis smiles at memento prepared for occasion. Hank says he is considering alternate means of getting high.

### Variable Annuity Unit Value

August .....	1.361
July .....	1.391
Average 1973 .....	1.752





(Photo by Gordon Enders)

**Vista New Mexico**

## Stalking (with Camera) the Big Horn Sheep in the Sandias

He is a magnificent creature. Weighing some 200 lbs., the Rocky Mountain Big Horn ram is absolute ruler of the cliffs and ledges of his domain. A big cat is his only threat, but the mountain lion can't negotiate the terrain easily.

A herd of Big Horn sheep occupy the west face of the Sandia mountains. The rugged cliffs, slopes, and deep canyons are ideal environment for the fleet and sure-footed sheep. They have survived in spite of increased traffic on the trails and encroachment upon their territory by more and more people in pursuit of outdoor recreation.

Nine sheep, imported from Alberta, Canada, were released in the Sandias in 1939 in an early experiment to transplant exotic big game animals. Four years ago, the herd was estimated at 150, but an official count has not been made since.

Pam Cotton, attractive 21-year-old daughter of Jack Cotton (AEC/ALO), is a wildlife biology major at the University of Wisconsin. She secured the "ideal summer job," conducting a sheep census in the Sandias for the State Game and Fish Department. "Fantastic," she says with a sheepish smile. "Imagine getting paid for this." With sweeping gesture she takes in the vast spread of the Rio Grande valley and bordering mountain ranges. The Manzanos to the south and Sangre de Cristos to the north are visible in the dawn's light from Sandia Crest.

Briskly Pam led us down a trail south of the Crest. A few panting minutes later we stopped again along the ridge line. The valley floor seemed thousands of feet straight down. Pam sat on the edge of the rim and surveyed the canyons with her binoculars.

"There," she said.

We focused our 300 mm lens. "Where?" we asked.

Aha! A movement catches our eye. "Hey, that's a funny looking Big Horn sheep." (Truth is I never have seen a Big Horn sheep. Met a goat once.)

"That's a deer," Pam says, "but isn't he beautiful. Hey there's another one."

We watched the deer for a little while and then moved on down the trail.

"Our Game and Fish department runs one of the most successful operations in the nation," Pam says, "more deer here now than in frontier times, like 1500 or so."

A huge Malamute comes bounding up the trail.

"Nuts," Pam says. "Someone's been at the meadow before us."

"Don't worry," a voice calls. "He's friendly."

The Malamute has both feet on my chest and he's staring me dead in the eye. He's wagging his tail and I guess that's a smile with all those teeth showing.

Then we meet Gordon Enders, a genial and bearded giant of a man burdened under an array of cameras, lenses and tripods. Gordon, a 78-year-old retired colonel, has been photographing the Big Horn sheep for the past 12 years. He and Pam exchange shop talk.

"Good crop of lambs this year . . . yeah, I counted eight last week . . . Old One-Horn is looking good . . . Have you seen Nubby lately? . . . That wise old lady is still in charge of the lambs . . . teaching them to forage last

week . . . something was chasing the herd . . . what's the count so far? About 50, but I can't be sure about the lambs . . . those woolly little devils all look alike."

Gordon lifts his heavy bag and trots on up the trail. I'm still panting. We sneak through a grove of aspens and approach the meadow. Nothing.

"Well," Pam says, "we can survey the cliffs and move on down toward the Summit House. Usually you can see them on the ledges or in the canyons — rarely in the trees."

An hour later at the Summit House the tram is making its first run. The youngster (he's about 25) who rides atop the car to inspect the cables is an old friend of Pam's. He's telling her about the young eagle.

"I've been watching him grow up," he's saying. "You know I've watched every one of them come along. This one is a real dum-dum. First stupid eagle I've ever seen. The old golden eagles had to kick him out of the nest to make him fly. First time out he fell about 300 feet before they caught him and brought him back. The old man must have spent an hour flapping his wings to show the kid how. All the time mama is telling him to pay attention. Anyway, the kid finally learned to flap around but he's uncoordinated. Yesterday I watched him come in for a landing.

"He overshot the nest and flopped head over heels into the rocks. Man, was he mad. Later he tried to land in a tree, grabbed a branch, but he was going too fast and he spun over on his face in the dirt. He just may not make it."

(The golden eagle is a rare bird. Full grown, it has a wing spread of six and a half feet. There are two couples with nests near the upper tram terminal.)

We watch the slopes beneath the tram for a while. Nothing. Reluctantly we start back up the trail toward the Crest parking area.

"Y'know," Pam says, "this is the first time that I've missed seeing the sheep in three weeks." She apologizes for not providing picture material. But we take her picture and borrow a great shot from Gordon. It was still a fun outing. • dg



PAM COTTON, State Game and Fish Department employee, searches for sheep from the rim of Sandia Crest.

M.E. Riley (5211), invited paper, "Non-Born-Oppenheimer Electronic Behavior," 1974 Southeastern U.S. Theoretical Chemistry Conference, June 7-8, Tuscaloosa, Ala.

G.W. Arnold, "Ion Damage in Insulators," APS Summer Study, Physics Problems Relating to Energy Technologies: Radiation Effects on Materials, June 17-28, Brookhaven National Laboratory, Upton, NY.

M.R. Scott (2642), "The Solution of Linear Multi-Point Boundary-Value Problems by the Method of Invariant Imbedding," 1974 SIAM National Meeting, June 24-26, Pasadena, Calif.

D.W. Schaefer (5814), "Light Scattering from Swimming Bacteria," and R.A. Anderson (5814), "Formation of the Bacterial Flagellar Bundle," Symposium on Swimming and Flying in Nature, July 8-9, Pasadena, Calif.

J.F. Muir (5644) and A.A. Trujillo (5645), "Comparison of Boundary Layer Transition Results, Including Transient Behavior, Obtained on Sharp and Blunt Slender Cones in Two Wind Tunnel Facilities"; C.W. Peterson and O.L. George (both 5645), "Wind Tunnel Pressure Probes: New Calibrations for New Geometries and Flow Environments"; C.W. Peterson, J.F. Reed (both 5645) and W.H. Curry (5625), "Electric Heater Development for a High Performance Mach Number 14 Wind Tunnel"; E.L. Clark, Jr. and R.H. Croll, Jr. (both 5645), "Applications of Digital Spectral Analysis and Filtering to Aerodynamic Testing," 8th Aerodynamic Testing Conference, AIAA, July 8-10, Bethesda, MD.

W.P. Bishop, E.T. Snow (both 1112), E.P. Royer, J.L. Benson (both 1115), and J.D. Plimpton (1112),

"Applications of the Poly(halo)styrene Dosimeter System in Pulsed and Steady State Environments," 5th International Congress of Radiation Research, July 14-20, Seattle, Wash.

D.R. Blazek (9624), "GAIN — An Interactive Graphics Interface for Circuit Analysis Programs," H.R. Spahr (5625) and H.A. Sumlin (2644), "Interactive Computer Graphics Applied to the Theoretical Aircraft/Store Separation Problem," Conference on Computer Graphics and Interactive Techniques, July 15-17, Boulder, Colo.

B.M. Bulmer (5628), "Base Heat-Transfer and Pressure Measurements on a Slender Reentry Vehicle

## Speakers

$M_{00}=18$ ," B.F. Blackwell (5628) and R.J. Moffat (Stanford Univ.), "Design and Construction of a Low-Velocity Boundary-Layer Probe," AIAA/ASME Thermophysics and Heat Transfer Conference, July 15-17, Boston, Mass.

H.J. Stein (5112) and W.D. Brown (2113), "Implantation and Irradiation Effects in MOS Capacitors"; G.W. Arnold (5112), "Ion Implantation Effects in Crystalline  $Al_2O_3$ "; J.A. Halbleib (5223), "Electron Transport in the Presence of Uniform Magnetic Field"; Halbleib and W.H. Vandevender (both 5223), "A One Dimensional Model of Coupled Electron-Photon Transport"; Halbleib, G.J. Lockwood

and G.H. Miller (both 5226), "Improved Calorimetric Method for Energy Deposition Measurement (Experimental)"; Miller and Lockwood, "Improved Calorimetric Method for Energy Deposition Measurement (Analysis)"; J.G. Fossum, H.H. Sander (both 2113), and H.J. Gerwin (2111), "The Effects of Ionizing Radiation on Diffused Resistors"; J.A. Hood (2110), "Balancing Reliability, Cost, and Hardness," IEEE Annual Conference, Nuclear and Space Radiation Effects, July 15-18, Fort Collins, Colo.

A.J. Toepfer, L.P. Mix, J.G. Kelly, J. Chang, P.A. Miller (all 5242), J.R. Freeman and J.W. Poukey (both 5241), "Plasma Phenomena in High Current Field Emission Diodes"; J.P. Brainard (2413), "Electric Field Distribution Measurements About Solid Axial Symmetric Insulators Using the Kerr Effect," and "Measurement of the Surface Charge on Hollow Cylindrical Insulators Using the Kerr Effect," VI International Symposium on Discharges and Electrical Insulation in Vacuum, University College of Swansea, July 15-19, Swansea, United Kingdom.

J.R. Guth (2121) and E.K. Kirchner (Teledyne MECO), "Development of a Laser Acoustic Delay Line for Radar Production Testing," 20th Annual Tri-Servide Radar Symposium, U.S. Military Academy, July 16-18, West Point, NY.

H.C. Monteith (9344), "Parapsychology and the Physical Sciences," UNM Psychology Symposium, June 18.

T.F. Marker (6010), "What Is the Oil Industry?" Sandia Civitan Club, June 18, Albuquerque.

G.W. Hughes (9474), "The Metric System and the Citizen," American Association of Retired Persons, June 26, Albuquerque.

## JUNK • GOODIES • TRASH • ANTIQUES • KLUNKERS • CREAM PUFFS • HOUSES • HOVELS • LOST • FOUND • WANTED • & THINGS

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5. For Sandra Laboratories and AEC employees only
6. No commercial ads, please
7. Include name and organization
8. Housing listed here for rent or sale is available for occupancy without regard to race, creed, color, or national origin

### MISCELLANEOUS

STEREO record player w/stand, \$35. Caster, 299-1239.  
TRUNDLE beds, springs & frames, no mattresses, \$7. Coalson, 298-0061.  
WESTERN saddle, 15" seat, \$125. Clem, 296-5204.  
RANGE, Tappan, 40" built-in, dbl. oven, rotisserie, \$40; Superba Kitchenaid dishwasher, built-in, \$50; Insinkerator waste disposer, \$10. Anderson, 299-5447.  
CHAIR, green rocker-recliner, gold swivel-rocker, \$35 ea. or best offer. McConahy, 299-3402.  
SAFETY helmet, Bell Super Magnum, 7-1/8, green visor, \$25. Lipkin, 296-1840.  
5500 BTU air conditioner, \$75; wool area rug w/7 complementary throw rugs, \$50; large cooler, \$8; Western boots, \$15. Pinkerton, 255-2505.  
ROYAL electric typewriter, recently overhauled, \$75. Browne, 345-3910.  
LAWN mower, reel self-propelled, 2 hp, horizontal shaft engine, \$20. Merritt, 299-1482.  
SINGLE bed, metal frame, box spring and mattress, \$15; crib, \$10; bassinet, \$5. Tischhauser, 293-9768.  
FRENCH Provincial sectional, custom made, beige; Italian Provincial cocktail and matching lamp tables, antique white w/cherry inlaid tops. Randall, 821-0388.

ALUMINUM lawn furniture; manual Underwood typewriter; Sears straight stitch sewing machine; classical guitar. Crumley, 299-5293.

CAMP-O-TELL car top camper complete w/water tank, ladder and storage rack, \$100. Schmierer, 299-2352.

USED 16" rims fitting '69 Chev. 1/2-ton pickup, for 6.50x16 tires. Causey, 299-0089.

WHITE sewing machine, w/cabinet, buttonholer, \$25. Berman, 296-5640.

TRIPPER pop-up camper for El Camino or Ranchero w/fastback roof '60-'72, \$950. Irving, 299-1969.

CHAIN link gate set, 3' high, total length 10' 8", small gate, 3' long, large gate, 7' 8" long for 11' 6" opening, \$30. Harrison, 296-7880.

JAPANESE Naval Officer's sword, \$55; old ammunition; large brass spittoon, \$25; old oil paintings, wanted, old ornate Bibles. Smitha, 293-1177.

HEAVY-DUTY dryer, \$125; patio set, \$160; dining room set, \$395; organ, \$500. Palmer, 296-1028.

BARBELL set, 4 ea. 10 lb. weights, 4 ea. 5 lb. weights, 4 ea. 2-1/2 lb. weights, 5 ft. bar, 2 14" bars, collars, \$15. Marchi, 299-3653.

ROTARY lawn mower, Sears, 20 in. w/catcher, \$20. Walter, 296-7062.

8 FT. cab-over camper, long wide bed, 3 burner stove, oven, ice box, corner jacks, \$900. Prekker, 821-1842.

GERMAN shepherd, white long hair, 1 yr. old. Freenway, 299-8540.

FLINTLOCK rifle, \$250. Ives, 281-3851.

'72 RITZCRAFT mobile home, 12 x 52, AC, skirting, tie downs, front & rear steps; located near Wyoming gate, \$4450. Werling, 293-7344.

GARAGE SALE: Ice chest, trailer mirror, air mattress, 8' ladder, 2 bikes, baby items, bird cage, canister set, etc. Wymer, 299-0717.

JUNHANS 0.1 sec. stopwatch, \$35; Nikkor 105/2.5 lens, \$135; Nikkor 50mm/1.4 lens, \$90; Nikkor 35mm p.c. lens, new, \$175. Mattox, 296-4149.

YEARLING black heifer, about 800 lbs., 50¢ per pound. Harley, 898-0594.

RABBITS, New Zealand Reds, 3 mos. old, pets or friers, \$2.50 ea. Stevens, 296-6326.

CUSTOM Imperial Frigidaire range, 2 ovens, oven surface units, 40", brown, \$95. Call during week. Donaldson, 255-4024.

'69 SAFEWAY 12 x 16 mobile home, 2-bdr., partially furnished, skirted, ready for occupancy, \$3750. Schallert, 298-8942.

BLACK male miniature poodle, 1 yr. old. Burger, 299-8626.

BIKES, 26" and trainer; 125cc Wards M/C; couch; potter's wheel; reel lawn mower; beds, full size and bunk. Snow, 296-5148.

FRESH sweet corn (roasting ears) for eating/freezing. Daniel, 296-3676.

AQHA registered Dun gelding, excellent breeding and conformation. Tucker, 877-1140.

HOME built cab-over camper, butane heater, stove, \$200; 16 ft. alum. boat, 20 hp Mercury, trailer, \$600; 15 ft. trailer chassis, \$100. Shock, 877-3728.

MAPLE bunk beds w/shelved headboards and mattresses. Jaramillo, 344-3957.

G.E. portable dishwasher, \$50; Wards B&W 23" TV, mahogany console, \$50; dog house for large dog, \$25; dinette w/2 chairs, \$25. Halbgewachs, 268-1584.

BIKE, boy's Schwinn, 2-spd., \$15. Shipley, 298-4304.

RUG, round, 12 ft., soft orange color, \$40; 20 vols. Science Encyclopedia, \$20; built-in electric oven, \$30. Barber, 299-4287.

21" COLOR TV, \$100; 2 bed frames w/headboards, \$20; phonograph turntable, movie camera, Head skis. Chandler, 296-3323.

### TRANSPORTATION

'67 SUZUKI, 250cc X6 Scrambler, \$250 or best offer. Greenholt, 294-5286.

'68 VW Fastback, rebuilt engine, new paint, 28 mpg, \$825. Prevender, 299-5253.

HONDA S65, 150 mpg., \$150; 250 H-D Sprint street legal dirt bike, \$300; 125 Suzuki MX racer, \$350. Carlson, 299-6610.

'73 VW custom camper, under 10,000 miles, sleeps 5, 20 mpg., \$4950. Meyer, 299-6565.

'70 DUCATI 450 street or dirt, choice of cams & sprockets, \$450. Olsen, 256-7051.

2 BIKES, girl's Spider, blue/white, 20" wh/wall std. tubes, \$30, thornproof tubes, \$33. Allen, 298-9437.

'72 KAWASAKI 500, \$725. Galloway, 255-0262.

'62 VW, new tires, \$450. Quant, 296-6826.

FIREBIRD Esprit, 1970, factory air, vinyl top, Rallye-II wheels, radio, PS, AT, raised letter wide tires, below NADA book. Atkins, 298-5762.

'72 CHEV. Carryall, 4-spd., V8, 45 gal. gas tank, eq/hitch, electric brakes, 23,000 miles, \$3500 firm. Nogales, 247-1178.

### REAL ESTATE

3-BDR, Townhouse Cooperative, \$840 equity, \$200 improvements, \$160/mo., available Sept. 1, near Montgomery and San Pedro. Toepfer, 296-6758.

LOT Glennwood Hills, Unit II, located adjacent (west) to 13,300 Cedarbrook Ave. Navratil, 293-5527.

TWO, 1-acre lots, Brazos Lodge area, \$2900 ea., terms negotiable. Lassiter, 298-2461.

### WANTED

16MM movie projector, sound or silent type. Pappas, 266-4757.  
SHOP manual for 1966 Ford Bronco. Rogers, 256-0066.

BOY'S 20" bike, in good condition. Harstad, 298-6551.  
USED soapbox derby wheels & axle. Harley, 898-0594.

100 LB. barbell set, 2 ea. 15-inch Ford pickup rims, 5 bolt hubs. Stevens, 296-6326.

'70 CAR or later model, comparable to a Nova w/AT & AC, bench seats; lady's golf clubs (woods). Chandler, 296-3323.

SHOP manual for '50 3/4-ton Ford pickup & '53 Ford car. Patterson, 243-6219.

### WORK WANTED

Beginning tennis lessons, private or group, taught by experienced teenager, reasonable rates. Walter, 296-7062.

### FOR RENT

3-BDR, 1-3/4 bath, new carpet, central heating & AC, built-in oven-range, large walled yard, landscaped, \$225/mo. Patterson, 243-6219.

NEW house in Cedar Crest, 2100 sq. ft. plus garage, one acre, \$300/mo., references required, Aug. 25. Hansche, 281-5350.

MINI-MOTOR home, 1973 Dodge Tioga, all the extras, 4 sleeper, daily or weekly rates plus mileage. Wetherholt, 299-5736.

2-BDR triplex unfurnished apt., range, refrigerator, carpet, draped, couple only, no pets, AC, NE. Piraino, 255-5126.

OWNER wishes to share 2-bdr. home in Sandia Park; room for one horse; bus service to Sandia. Hawkinson, 281-3415.

### LOST AND FOUND

LOST — Screwback drop earring w/bears foot inlay in turquoise. LOST AND FOUND, Bldg. 832, tel. 264-3441.

FOUND — 3 car keys on a red Dodge key ring; black frame safety glasses RX. LOST AND FOUND, Bldg. 832, tel. 264-3441.

19 — HAPPY HOUR SOUTHERN BUFFET Adults \$2.95 Under 12 \$1.95 <b>SHALAKO COUNTRY SWING</b> Lounge Yolanda	20 — SHRIMP PEEL SPECIAL ENTERTAINMENT Reservations Only \$4.90
26 — HAPPY HOUR BAKED HAM DINNER Adults \$2.75 Under 12 \$1.75 <b>STAR SAPPHIRES</b> Lounge Denny	27 — SOUL SESSION 8:30-12:30 <b>ACUMULUS</b> Members Free Guests \$1.00

**CLOTHES** — close up. The latest in summer fashions (from Pat Dalton's), the prettiest (and handsomest) Flair models, the Southernmost in food (barbequed ribs, hushpuppies, grits, watermelon). Plus Yolanda and the Shalako Country Swing. Tonight at Happy Hour.

**PEELERS** — gather at the Club tomorrow eve for the Gala Annual Imported-from-the-Gulf Shrimp Peel. Ticket holders only.

**FOOTBALL** — season tickets at a whopping discount: that's the most notable achievement of C-Club's newest group, the Wolfpack. Only \$24 for the regular \$36 tickets which get you great seats for all six Lobo home games. The offer is good for any C-Club member, not only Wolfpackers. Call George Horne, and soon, at 296-1416 for how-to-cheer-cheap information.

**HEAVENLY** — Three vaguely astral groups, Morning Star, Star Sapphires, and Acumulus, booked for the 25th, 26th, and 27th, respectively. On Thursday, Morning Star will set at 7:30 for the Teen Go-Go. On Friday the Star Sapphires will be the featured jewel for Happy Hour (which includes a Baked Ham dinner). And Saturday's Soul Session will have Acumulus releasing sweet vapors for dancing.

**ANNUALLY** — C-Clubbers gather for their general meeting and election of officers. This year it's Monday, August 5, at 7:30. Put



AMAZING, isn't it, what tea leaves can tell you? Jay Holton (9742) and Peggy Simma (C-Club) will likely adjourn their tea party soon — and catch a party at the Club. Good idea, that.

it on your calendar now, and check here in two weeks for more details.

**CHRISTMAS** - can be really memorable this year if you sign up for one of the Club's holiday trips. The Caribbean Cruise starts at \$653, the Mexico City and environs tour at

\$309 (transportation included in both figures). \$100 deposit for each member or guest. Either trip would make a great Christmas present — but don't expect gift wrapping.

MORE INFO — 265-6791.

GO-GO • FASHIONS • SOUL • HUSHPUPIES • HAM

## Car Pool Problems?

With 550 car pools now in operation at the Labs, a few problems crop up — people-type problems. So we've engaged Otto Miles Shorter, the country's leading car pool shrink, to work on the subject.

**Advice to the Poolorn**  
by Otto Miles Shorter, Exp.

Dear Otto:

We always have to wait for one of the guys in our pool. He just can't seem to get up in time to get ready in time. So every morning we spend 15 minutes admiring his lawn and we barely make it to work by 8. What should we do?

ANN GREE

Dear Ann:

A habitually late pooler deserves L' Anguish-Petit (i.e., being left behind) at least once. If no correction or at least contrition is noticeable, L' Anguish Grand (i.e., ejection from the pool) is in order. Wasting other people's time, admirable lawn or not, is inexcusable.

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Dear Otto:

Our car pool driver drives too fast. I don't

mind 5 mph over the posted limit once in a while, but a constant 10 or 15 over is too much. How can we get him to slow down?

**ROUND N' ROUND**  
ON CAROUSEL AVE

Dear Round:

Speeding is illegal, unsafe, and inconsiderate. Draw straws to determine which rider will bring up the subject, then all of you chime in. Remind him that constant surveillance for blinking red lights and wailing sirens is not conducive to easy riding and that speeding tickets don't come under the "share the expenses" heading.

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Dear Otto:

I am an attractive divorcee and find myself drawn to bachelor Charley in our car pool. But some mornings he says "Good morning" and other times he only says "Morning." Does Charley like me?

**LONELY WITH SIX KIDS**

Dear Lonely:

Wheel out the six kids some morning. It's well established that a pack of active kids will bring any man out of his shell.

